

Energy and Environmental Analysis, Inc.

- A Focus on North American Natural Gas
Market Analysis -

Prepared for:

Docket 04-IEP-01-D, Electricity and Natural Gas Forecast Options, 2005 Energy
Report: Electricity and Natural Gas Forecasts December 16, 2004 Workshop

December 16, 2004

Energy and Environmental Analysis, Inc.

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Overview - Who is EEA?

- ◆ Energy and Environmental Analysis (EEA) is a mid-sized consulting company located in the Washington, DC area
- ◆ Long history of high quality analysis
 - Founded in 1974
- ◆ Staff of over 30 with mixed economic and technical backgrounds
- ◆ Work equally split between energy and environmental practices
- ◆ Approximately two-thirds of work for private sector clients, and one-third for institutional clients, state and local governments, and federal agencies

Primary Work Areas

- ◆ Energy supply and demand analysis, modeling and forecasting
- ◆ Economic analysis
- ◆ Environmental policy analysis
- ◆ Analysis of energy technologies and markets
- ◆ Transportation systems

Energy Practice Areas

- ◆ Energy market forecasting
 - Energy prices, supply and demand trends, and required infrastructure
- ◆ Oil and gas resource base analysis
- ◆ End-use sectoral analyses
- ◆ Analysis of natural gas infrastructure, adequacy, reliability, and security

Energy Practice Areas

- ◆ Gas LDC practice
 - Regulatory support (some through AGA)
 - Risk management
 - Business development
 - Supply planning
- ◆ Electricity markets and regulations
- ◆ General litigation support
- ◆ Contract negotiations, due diligence
- ◆ Energy policy modeling (Government and Institutional Clients)

North American Gas Market Analysis

Recent Studies Relevant to California Market Analysis

- ◆ Primary consultant for the 2003 National Petroleum Council study on the North American natural gas market
- ◆ Recently completed a study for the Interstate Natural Gas Association of America that assessed the impact of delays in natural gas infrastructure development
- ◆ Currently completing work for the Department of Energy that focuses on security of critical natural gas infrastructure
- ◆ Conducted seven studies over the past 12 months for LNG suppliers and buyers related to expected market conditions for LNG imports in North America and LNG contracting and pricing decisions
- ◆ Provided gas market analysis for the filing at the NEB of the Mackenzie Delta gas pipeline project

North American Gas Market Analysis

Recent Studies Relevant to California Market Analysis

- ◆ Technical and economic consultant to participants of the industry-wide Gas Interchangeability Work Group initiated by the Natural Gas Council to address policy issues related to the chemical composition of LNG imports and domestic processed gas
- ◆ For a major U.S. independent, completed a resource assessment and production forecast for the Green River and Powder River Basins in support of a corporate decision to make additional investments in those areas
- ◆ For a large gas utility, assessed gathering and processing investment opportunities in several Midcontinent and Rockies Basins
- ◆ On behalf of AGA, participated in several FERC meetings and workshops related to gas market liquidity and gas price index reliability

North American Gas Market Analysis

Recent Studies Relevant to California Market Analysis

- ◆ In a study for one of the largest current owners of gathering/processing assets, prepared a detailed production multiyear forecast for all of the Rockies basins and major plays and estimated the need for new pipeline capacity
- ◆ For the National Committee of Energy Policy, prepared white papers on the expected economic cost of an Alaskan Gas Pipeline price support proposal and the effect of high natural gas prices on U.S. industrial competitiveness and jobs
- ◆ Provided background analyses and expert testimony for a Canadian Energy Board hearing on TransCanada rate changes related to transmission services and storage transport operations

North American Gas Market Analysis

Subscription Services

Gas Market Compass

- ◆ 20 year outlook for the North American gas market
- ◆ Significant regional detail
 - 450+ page databook
- ◆ Alternative scenarios provided on request
- ◆ Quarterly issues

Monthly Gas Update

- ◆ Newsletter with monthly projection for next two years
- ◆ Provides perspective on current conditions in the gas market
- ◆ Lead article addresses hot topics in the gas market

North American Gas Market Analysis Models

Hydrocarbon Supply Model

- ◆ Original version dates back to 1984; several revisions and updates since
- ◆ Projects U.S. and Canada drilling activity, reserve additions and production for gas and oil through 2030
- ◆ Primary use is analysis of long term gas availability

Gas Market Data and Forecasting System

- ◆ Operating since 1997
- ◆ Simulates monthly gas markets in the U.S. and Canada; consumption, production, interregional flows, and storage activity
- ◆ Solves for regional gas prices
- ◆ Primary uses have been for facilities planning and analysis of near-term gas pricing

Daily Load Model

- ◆ Projects daily gas requirements by sector for many areas throughout North America
- ◆ Identifies need of gas storage and other natural gas facilities
- ◆ Daily loads provided for normal or actual weather

Regional Infrastructure Assessment Modeling System

- ◆ Detailed regional assessments of gas infrastructure adequacy
- ◆ Identifies prime locations for new facilities
- ◆ Provides impact of facility disruption

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